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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,385	03/26/2007	Karl-Ernst Hensger	HM-680PCT	6474
40570	7590	05/14/2009		
FRIEDRICH KUEFFNER 317 MADISON AVENUE, SUITE 910 NEW YORK, NY 10017			EXAMINER YEE, DEBORAH	
			ART UNIT	PAPER NUMBER
			1793	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,385	Applicant(s) HENSGER ET AL.	
	Examiner Deborah Yee	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/16/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The term "preferably" is speculative and therefore indefinite.

4. Claim 1 recites "0.9% Si" and "1.2% Al" which do not clearly define the present invention. It is recommended to use language such as ---up to 0.9% Si--- and ---up to 1.2% Al---.

5. Claim 1 recites " $A_3 = 100\text{ K} < T_{\text{finish}} < A_3 = 50\text{ K}$ " which does not clearly define the present invention because $100\text{ }^{\circ}\text{K} = -173.15\text{ }^{\circ}\text{C}$ and $50\text{ }^{\circ}\text{K} = -223.15\text{ }^{\circ}\text{C}$, and T_{finish} should be at least 800°C as evident by example on line 11 in page 9 of the instant specification.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 1 to 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 09-241790 ("JP-790") alone or in view of US Patent 3,533,261 ("Hollander") or US Patent 3,905,216 ("Hinrichsen").

8. Similar to present invention, the English abstract of JP-790 discloses a method for producing hot-rolled steel plate with a dual-phase microstructure consisting of at least 70 vol.% ferrite and a balance of martensite, by means of continuous hot rolling such that finish rolling temperature is at 820 to 900°C, and the resultant steel is subjected to a two-stage controlled cooling comprising the steps of cooling from finish rolling temperature down to 760 to 600°C at cooling rate at $\geq 30^{\circ}\text{C/sec}$, isothermal holding for 3- 15 seconds, and then cooling down to $\leq 200^{\circ}\text{C}$ at $\geq 30^{\circ}\text{C/sec}$.

9. The prior art method teaches essentially the same steps as present invention with temperature and cooling rates ranges that overlap those recited by the claims. In addition, prior art uses steel plate having a composition with constituents whose wt% ranges overlap those recited by the claims. Note that such overlap in ranges establishes a prima facie case of obviousness since it would be obvious for one skilled in the art to select the claimed ranges over the broader disclosure of the prior art since the prior art teaches the same objective to produce a dual-phase steel with at least 70 vol.% ferrite and a balance of martensite.

10. Even though prior art method does not teach continuous casting, such step would be expected or obvious for one of ordinary skill to incorporate since it is conventional practice in the metallurgical art for continuous casting to precede continuous hot rolling and continuous cooling when making plate or strip.

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11. Also specific example A in table 1 on page 8 of JP-790 closely approximates the claimed composition and is processed according to examples A1 in table 3 in same manner as claimed by Applicants comprising the steps of heating at 1200°C, hot rolling with a finishing temperature at 870°C, cooling from 870°C to 695°C, holding at 695°C for 5 sec and then cooling at 50°C/sec to 100°C. In addition to example A1, JP-790 also discloses example B1 and D1 that closely meet the recited claims.

12. Moreover, according to tables 3 and 4, specific examples exhibit a tensile strength greater than 600 MPa (equivalent to 62.3 Kg/mm²) and a microstructure comprising 70 vol.% ferrite or more with a balance of martensite.

13. In regard to claims 2 to 4, JP-790 in figure 1 teaches a cooling line which is installed after the last finishing stand and has several successive, spaced water cooling units for carrying out the method in accordance with the present invention wherein each water cooling unit contains water sprayers that are arranged to cool the upper and lower surface of the hot rolled steel plate.

14. Although each cooling unit having several sprays or last cooling unit having eight switchable valves for each four spray bars on the top and on the bottom as recited by claims 3 and 4 is not taught by JP-790, such difference would not be a patentable merit because selection of apparatus limitations would be a matter of choice and routine optimization well within the skill of the artisan to incorporate when a more accurately controlled cooling rate is so desired. Note that it is conventional practice in the metallurgical art to adjust cooling rate according to number and distribution of sprayers

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and water-adjusting valves, as evident by secondary references, Hinrichsen and Hollander.

15. For the foregoing reasons, claims would not patentably distinguish over prior art.

16. Machine-English translation of Japanese patent 09-241790 can be obtained at http://www.ipdl.inpit.go.jp/homepg_e.ipdl

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1793

/DY/